Subject: Re: bizarre number transformation Posted by Paul Van Delst[1] on Fri, 26 Jul 2002 14:39:38 GMT

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James Kuyper wrote:

> Craig Markwardt wrote:

>>

- >> James Kuyper <kuyper@gscmail.gsfc.nasa.gov> writes:
- > ...
- >>> The point is, that it's pretty rare to need that many significant
- >>> digits. There aren't many real-world numbers that can be measured to
- >>> within one part in a billion. Precision needs like that can come up in

> > ..

- > [some examples where such precision is needed]
- >> Admittedly those are pretty specialized applications :-)

>

- > Precisely. I also do scientific programming, where such needs are pretty
- > common. But the vast bulk of the world's programming involves numbers
- > that can be represented with adequate accuracy using single precision
- > floating point. For instance, how many million-dollar quantities are
- > actually measured with a precision of +/-\$1?

I would hope the answer is not any at all. I would think that 10th's of a US dollar/Euro (or even 100th's) would be used. Exchange rates are usually quoted to 1000th's of a US Dollar. This is all a hopeful thought on my part since my past and forecast number of million dollar transactions is, unfortunately, zero.

- > And how many people would
- > actually care if such quantities were in error by \$1 or two?

Depends how many transactions the error occurs in and whether it's a random or systematic error. These little bits can add up to a lot. Which is sort of what this whole thread is about in a way - cumulative numeric precision "errors".

paulv

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Beer is good. My wife.

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